REMARKS

Claims 1-47 are pending, but claims 20, 21 and 25-47 have been withdrawn from consideration.

I. Amendments

Claim 1 has been amended to add a pH range to be consistent with the other independent claims. Claims 1 and 11 have also been amended to correct typographical errors by inserting hyphens in some chemical formulas. It is respectfully submitted no new matter is presented by these amendments.

II. 35 USC § 103

Claims 1-19 and 22-24 are rejected under 35 USC § 103(a) as obvious over McCall (US Patent 5,277,899) or Li et al (US Patent No. 5,580,819) each in view of AU 199915321. These rejections are respectfully traversed.

AU199915321 is not prior art because the present independent claims are entitled to the filing date of the parent of the present application. Thus, the rejection is overcome.

AU199915321 appears to be the Australian phase of WO 99/27057 (ATTACHMENT I, esp@cenet printout for WO 99/27057). WO '057 has an international filing date of 20 November 1998 and was published 3 June 1999. WO '057 designated the US but was filed before November 29, 2000. Thus, its earliest effective date as a reference is its publication date of 3 June 1999 (ATTACHMENT II, excerpt from new USPTO guidelines).

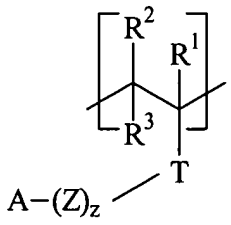
US 6,372,708 and 6,528,477 are descendants of WO '057 (ATTACHMENT III, cover pages of the '708 and '477 patents). '708 is a continuation of WO '057 and '477 is a continuation of '708.

The earliest effective 102(e) date as a reference for the descendent US patents is the US '899 filing date of May 18, 2000 according to USPTO guidelines. Although WO '057 claims priority from three provisionals, it does not have a 102(e) date from these provisional application priority dates according to the new USPTO guidelines (ATTACHMENT II, excerpt from new USPTO guidelines).

The present independent claims are entitled to the May 26, 1999 filing date of their parent application USSN 09/318,942. This parent is incorporated by reference. A

true copy of this provisional application is attached (ATTACHMENT IV). Present independent Claims 1, 11 and 12 are supported by the parent application as follows:

Present Claim 1	**Support in Parent**
1. (Twice Amended) A block polymer suds stabilizer comprising:	Page 4, line 26
i) one or more cationic group-containing units; and	Claim 1
ii) one or more additional building block units;	Claim 1
provided that the block polymer has an average cationic charge density of about 5 or less units per 100 daltons molecular weight,	Page 4, lines 18-23 states "The [block] polymeric material preferably may comprise any material provided the final polymers have an average cationic charge density of ... about 0.05 or less... per 100 daltons molecular weight at a pH of from about 4 to about 12." The 5 of the present Claim 1 is the same as the 0.05 of the parent. The 0.05 of the parent is a raw decimal whereas the 5 is the value of this raw decimal converted to a per 100 daltons molecular weight basis consistent with definitions in the applications. The presentation of the 0.05 in raw decimal form in the parent was an inadvertent typographical error as explained in paragraphs below this Table.

selected from the group consisting of one or more units having one or more hydroxyl groups, provided that said polymer has a Hydroxyl Group Density of about 0.5 or less,	Claim 2
and one or more units having one or more hydrophobe groups selected from the group consisting of non-hydroxyl groups, non-cationic groups, non-anionic groups, non-carbonyl groups, and/or non-H-bonding groups;	Claim 3
wherein said block polymer comprises a cationic unit of the formula:  [I]	Claim 8
wherein each of R^1, R^2 and R^3 are independently selected from the group consisting of hydrogen, C_1 to C_6 alkyl, and mixtures thereof;	Claim 8

T is selected from the group consisting of substituted or unsubstituted, saturated or unsaturated, linear or branched radicals selected from the group consisting of alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, ester, ether, carbonyl, amido, amino, glycidyl, carbanato, carbamate, carboxylic, and carboalkoxy radicals and mixtures thereof;	Claim 8
Z is selected from the group consisting of: $-(CH_2)-$, $-(CH_2-CH=CH)-$, $-(CH_2-CHOH)-$, $-(CH_2-CHNR^4)-$, $-(CH_2-CHR^5-O)-$ and mixtures thereof;	Claim 8
R^4 and R^5 are selected from the group consisting of hydrogen, C_1 to C_6 alkyl and mixtures thereof;	Claim 8
z is an integer selected from about 0 to about 12;	Claim 8
A is NR^6R^7 or $NR^6R^7R^8$ wherein each of R^6, R^7 and R^8, when present, are independently selected from the group consisting of H, C_1-C_8 linear or branched alkyl, alkyleneoxy having the formula: $-(R^9O)_yR^{10}$	Claim 8
wherein R^9 is C_2-C_4 linear or branched alkylene, and mixtures thereof;	Claim 8
R^{10} is hydrogen, C_1-C_4 alkyl, and	Claim 8

mixtures thereof; and	
y is from 1 to about 10; and	Claim 8
wherein said block polymer has an average molecular weight of from about 35,000 to about 750,000 daltons.	Page 8, lines7-8

As stated above, the "0.05" of the parent page 4, lines 18-23 was an apparent typographical error and it is not new matter to correct it to "5" as in present claim 1. Thus, the parent application disclosure of about 0.05 or less supports the present recitation of 5 or less. The 0.05 is on a raw decimal basis. However, the raw decimal value should have been multiplied by 100 to equal 5 because it should have been recited on a weight percent basis (or per 100 daltons molecular weight basis).

Page 40 of the parent defines the term "cationic charge density". Page 40, lines 26-27, of the parent states:

> "For purposes of the present invention the term "cationic charge density" is defined as "the number of units that are protenated at a specific pH **per 100 daltons mass of polymer**. (emphasis added)"

Page 41, lines 9-12, of the parent states:

> "Herewith the term cationic charge density is defined as the amount of cationic charge on a given polymer, either by permanent cationic groups or via protenated groups, as a **weight percent** of the total polymer at the desired pH. (emphasis added)"

These are two ways to say the same thing because the weight percent is the number of parts per 100 parts.

The present application at page 41, lines 2-5 and 18-21, essentially has the same definitions. Also, present Claim 1 expressly recites the cationic charge density is "per 100 daltons molecular weight."

Thus, the cationic charge density ranges in the specification and claims of the parent and the present application were supposed to be expressed as weight percents (i.e., per 100 daltons molecular weight) rather than raw decimals. However, apparently the cationic charge density ranges in the specification and claims **of the parent** are expressed as raw decimals. These raw decimals should have been multiplied by 100 to be on the correct weight percent (i.e., per 100 daltons molecular weight) basis according to the definitions in the parent specification.

For example, page 41 of the parent, line 22, calculates:

Cationic Charge Density = 14/(157+116+116+116+72)*50%=0.0132, or 1.32%.

Please note, in this equation the 50% has nothing to do with converting a raw decimal to a weight percent. It merely indicates half the nitrogens in the molecule are protenated.

Likewise, page 41 of the parent, last line, calculates:

Cationic Charge Density = 14/(157+116+116+116)*100%=0.0277, or 2.77%.

Please note, in this equation the 100% has nothing to do with converting a raw decimal to a weight percent. The 100% merely indicates all the nitrogens in the molecule are protenated.

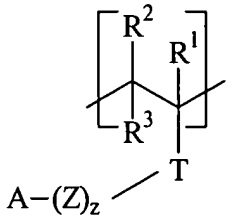
The raw decimals of these calculations on page 41 of the parent fall within ranges listed in the parent specification and claims, but the percentages listed on page 41 of the parent are all outside the claimed range. For example, parent claim 6 recites an average cationic charge density range from about 0.0001 to about 0.05 units per 100 daltons molecular weight.

Thus, it is apparent the ranges for cationic charge density in the specification and claims of the parent application are mistakenly on a raw decimal basis rather than being on a per 100 daltons molecular weight basis according to the definitions. Thus, it is

respectfully submitted it would not be new matter to convert these raw decimal ranges to the correct basis by multiplying them by 100 to be on a per 100 daltons molecular weight basis as was done in the present application to be consistent with the definitions.

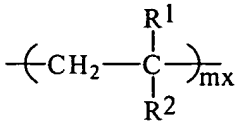
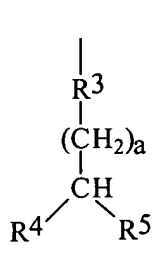
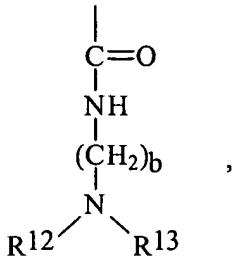
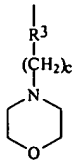
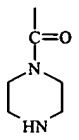
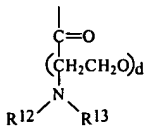
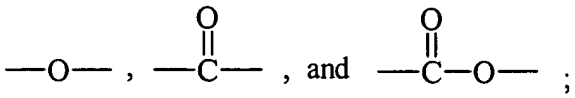
Also, the original parent specification at page 41, lines 1-4, says 2 cationic charge units divided by 1028 daltons molecular weight equals a cationic charge density of approximately 0.002 units of cationic charge per 100 daltons molecular weight. This was a mathematical error. 2 cationic charge units/1028 daltons molecular weight = 0.002. However, this equals 0.2 ***per 100 daltons molecular weight***. Thus, the disclosed value should have been multiplied by 100. This apparent typographical error was corrected in the present application. Please see the present specification at page 41, second full paragraph which shows a correct calculation wherein 2 cationic charge units divided by 1028 daltons molecular weight equals approximately 0.2 units of cationic charge per 100 daltons.

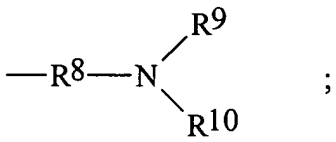
Present Claim 11.	Support in parent
A block polymer suds stabilizer comprising	Page 4, line 26
at least a first homopolymeric unit comprising a series of first cationic monomeric units and	Claim 11
at least a second hompolymeric unit comprising a series of second polymeric units,	Claim 11
at least said first monomeric units capable of having a cationic charge at a pH of from about 4 to about 12;	Claim 11
provided that said polymer has an average cationic charge density from about 0.05 to about 5 units per 100 daltons molecular weight at a pH of from about 4 to about 12,	Page 4, lines 18-23 of the parent discloses about 0.0005 and about 0.05 as range endpoints at a pH of from about 4 to about 12. As explained above, the 0.05 and 5 of the present claim are the same as the 0.0005 and 0.05, respectively, of the parent. The 0.0005 and 0.05, respectively, of the parent are raw decimals which support the present range of about 0.05 to about 5 when converted to the "per 100 daltons molecular weight" basis.
wherein said second polymeric units are selected from the group consisting of one or more units having one or more hydroxyl groups, provided that said polymer has a Hydroxyl Group Density of about 0.5 or less, and	Claim 2

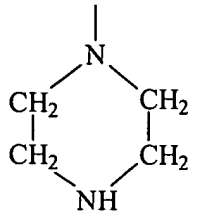
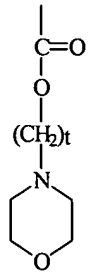
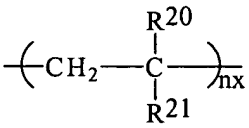
one or more units having one or more hydrophobe groups selected from the group consisting of non-hydroxyl groups, non-cationic groups, non-anionic groups, non-carbonyl groups, and/or non-H-bonding groups;	Claim 3
wherein said block polymer comprises a cationic unit of the formula:  [I]	Claim 8
wherein each of R^1, R^2 and R^3 are independently selected from the group consisting of hydrogen, C_1 to C_6 alkyl, and mixtures thereof;	Claim 8
T is selected from the group consisting of substituted or unsubstituted, saturated or unsaturated, linear or branched radicals selected from the group consisting of alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, ester, ether, carbonyl, amido, amino, glycidyl, carbanato, carbamate, carboxylic, and carboalkoxy radicals and mixtures thereof;	Claim 8
Z is selected from the group consisting of: -(CH_2)-, -$(CH_2$-CH=CH)-, -$(CH_2$-CHOH)-,	Claim 8

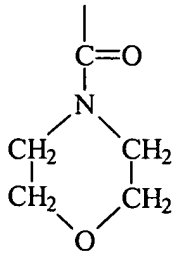
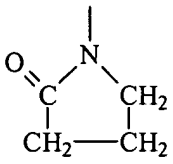
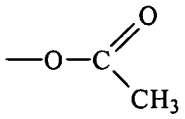
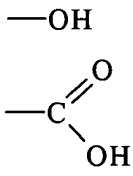
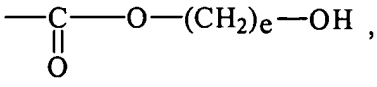
$-(CH_2-CHNR^4)-$, $-(CH_2-CHR^5-O)-$ and mixtures thereof;	
R^4 and R^5 are selected from the group consisting of hydrogen, C_1 to C_6 alkyl and mixtures thereof;	Claim 8
z is an integer selected from about 0 to about 12;	Claim 8
A is NR^6R^7 or $NR^6R^7R^8$ wherein each of R^6, R^7 and R^8, when present, are independently selected from the group consisting of H, C_1-C_8 linear or branched alkyl, alkyleneoxy having the formula: $—(R^9O)_yR^{10}$	Claim 8
wherein R^9 is C_2-C_4 linear or branched alkylene, and mixtures thereof;	Claim 8
R^{10} is hydrogen, C_1-C_4 alkyl, and mixtures thereof; and	Claim 8
y is from 1 to about 10; and	Claim 8
wherein said block polymer has an average molecular weight of from about 35,000 to about 750,000 daltons.	Page 8, lines 7-8

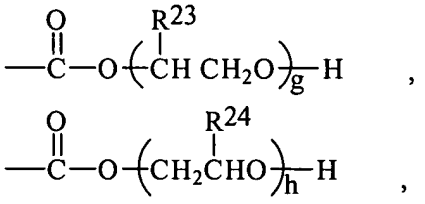
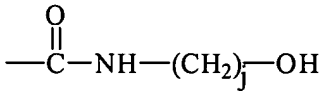
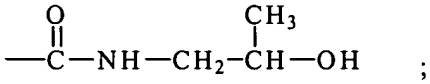
Present Claim 12	**Support in Parent**
A block polymer suds stabilizer comprising	Page 4, line 26
at least one homopolymeric block of monomeric units A and at least one member of the group consisting of a homopolymeric block of monomeric units B and a homopolymeric block of monomeric units C	Claim 12
provided that said polymer has an average cationic charge density of at most about 5 units per 100 daltons molecular weight at a pH of from about 4 to about 12; and	Page 4, lines 18-23 states "The [block] polymeric material preferably may comprise any material provided the final polymers have an average cationic charge density of ... about 0.05 or less... per 100 daltons molecular weight at a pH of from about 4 to about 12." As explained above, the 5 of the present Claim 12 is the same as the 0.05 of the parent. The 0.05 of the parent is a raw decimal whereas the 5 is the value of this raw decimal converted to a per 100 daltons molecular weight basis consistent with definitions in the applications.
wherein said block polymer has an average molecular weight of from about 35,000 to about 750,000 daltons :	Page 8, lines 7-8

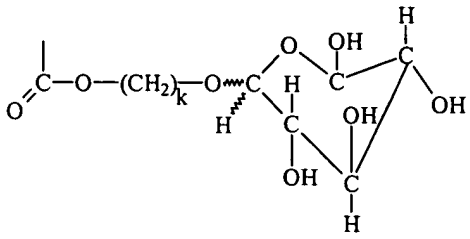
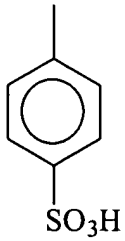
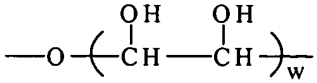
A. said block of cationic monomeric units A having a Formula I:  I wherein R^1 is H or an alkyl having 1 to 10 carbon atoms,	Claim 12
R^2 is a moiety selected from the group consisting of  ,  ,  ,  , and  .	Claim 12
wherein R^3 is selected from the group consisting of  ;	Claim 12

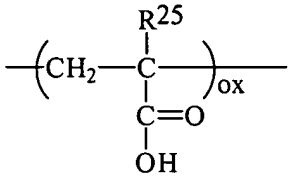
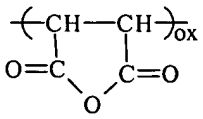
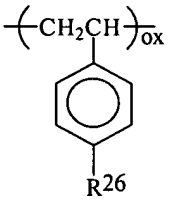
a is an integer from 0 to 16; b is an integer from 2 to 10; c is an integer from 2 to 10; d is an integer from 1 to 100;	Claim 12
R^4 and R^5 are independently selected from the group consisting of -H, and  ;	Claim 12
R^8 is independently selected from the group consisting of a bond and an alkylene having 1 to 18 carbon atoms; R^9 and R^{10} are independently selected from the group consisting of -H, alkyl having 1 to 10 carbon atoms; R^{12} and R^{13} are independently selected from the group consisting of H and alkyl having from 1 to 10 carbon atoms;	Claim 12

	Claim 12
	Claim 12
wherein t is an integer from 2 to 10;	Claim 12
B. said monomeric unit B is selected from the group consisting of: a monomeric unit of Formula IV  IV wherein R^{20} is selected from the group consisting of H and CH_3;	Claim 12

R^{21} is selected from the group consisting of:  ,	Claim 12
	Claim 12
	Claim 12
 , ,  , wherein e is an integer from 3 to 25;	Claim 12

$-O-(CH_2)_f-CH_3$ wherein f is an integer from 0 to 25;	Claim 12
 wherein g is an integer from 1 to 100, h is an integer from 1 to 100, R^{23} is -H, $-CH_3$ or $-C_2H_5$, R^{24} is $-CH_3$ or $-C_2H_5$;	Claim 12
 wherein j is an integer from 1 to 25;  ;	Claim 12

 wherein k is an integer from 1 to 25;	Claim 12
 ;	
-NH-$(CH_2)_r$-NH_2·HCl, wherein r is an integer from 1 to 25; and	Claim 12
a polyhydroxy monomeric unit of Formula VI:  VI wherein w is an integer from 1 to 50; and	Claim 12

C. monomeric unit C is selected from the group consisting of:  wherein R^{25} is -H or $-CH_3$,  and  wherein R^{26} is -H or CH_3, and	Claim 12
x represents the total number of monomeric units within the block polymer; m, n, o, when present, represent the mole ratio of their respective monomeric units in a given block polymer, wherein at least two different monomeric units are present in the block polymer.	Claim 12

As all the art rejections include AU '321 it is respectfully submitted all the art rejections are overcome.

III. 35 USC 112

The Office action asserts Claims 7 and 8 stand in wrong dependency. Applicant respectfully traverses. Claims 7 and 8 were amended by a prior amendment to depend from Claims 11 and 12. It is respectfully submitted that it is permissible to amend claims

to have a dependent claim before its base claim. Moreover, the molecular weights of the dependent claims are narrower than those of their base claims. If Applicant has misinterpreted the Examiner's rejection she is encouraged to contact the undersigned to discuss this.

IV. Conclusion

In view of the above, it is respectfully submitted that all objections and rejections are overcome. Thus, a Notice of Allowance is respectfully requested.

Respectfully submitted,

Date: June 11, 2003 By: _____

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ATTACHMENT I - esp@cenet printout

WO9927057 Biblio Desc Claims

esp@cenet

LIQUID DETERGENT COMPOSITIONS COMPRISING POLYMERIC SUDS ENHANCERS

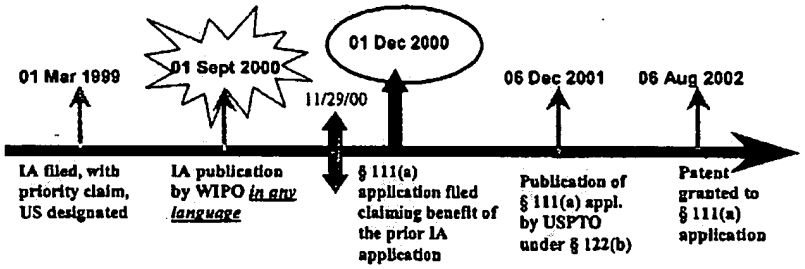
Patent Number:	WO9927057
Publication date:	1999-06-03
Inventor(s):	KASTURI CHANDRIKA (US); KLUESENER BERNARD WILLIAM (US); SCHAFER MICHAEL GAYLE (US); SCHEPER WILLIAM MICHAEL (US); SIVIK MARK ROBERT (US)
Applicant(s):	KASTURI CHANDRIKA (US); KLUESENER BERNARD WILLIAM (US); SCHAFER MICHAEL GAYLE (US); SCHEPER WILLIAM MICHAEL (US); SIVIK MARK ROBERT (US); PROCTER & GAMBLE (US)
Requested Patent:	☐ WO9927057
Application Number:	WO1998US24852 19981120
Priority Number (s):	US19970066747P 19971121; US19980087714P 19980602; US19980091672P 19980702
IPC Classification:	C11D3/37; C11D3/30
EC Classification:	C11D3/00B5, C11D3/37C8F
Equivalents:	AU1532199, BR9812788, CZ20001603, ☐ EP1032633 (WO9927057), JP2001524587T
Cited Documents:	DE4302315; US4579681; EP0013585; EP0560519; EP0494554; WO9500611; WO9828393; WO9637597; WO9602622; JP57044700

Abstract

The present invention relates to liquid detergent compositions comprising a polymeric material which is a suds enhancer and a suds volume extender, said compositions having increased effectiveness for preventing re-deposition of grease during hand washing. The polymeric material which are suitable as suds volume and suds endurance enhancers comprise an effective amount of a polymeric suds stabilizer comprise: I) units capable of having a cationic charge at a pH of from about 4 to about 12; provided that said suds stabilizer has an average cationic charge density from about 0.0005 to about 0.05 units per 100 daltons molecular weight at a pH of from about 4 to about 12.

Example 9: References based on a § 111(a) Application which is a **Continuation** (filed prior to any entry of the National Stage) **of an International Application**, which was **filed prior to November 29, 2000** (language of the publication under PCT Article 21(2) is not relevant)

Both the U.S. publication and the U.S. patent of the § 111(a) continuation (filed prior to any entry of the National Stage) of an international application (IA) that was filed prior to November 29, 2000 have the § 102(e) prior art date of its actual U.S. filing date under §111(a). No benefit of the international filing date (nor any U.S. filing dates prior to the IA) is given for § 102(e) prior art purposes if the IA was filed prior to November 29, 2000. The IA publication under PCT Article 21(2) does not have a prior art date under § 102(e)(1) because the IA was filed prior to November 29, 2000. The IA publication under PCT Article 21(2) can be applied under § 102(a) or (b) as of its publication date.



The § 102(e)(1) date for the IA publication by WIPO is: None
The § 102(e)(1) date for Publication by USPTO is: 01 Dec 2000
The § 102(e) date for the Patent is: 01 Dec 2000

The IA publication by WIPO can be applied under § 102(a) or (b) as of its publication date (01 Sept 2000).

Additional Priority/Benefit Claims:

- ✓ If the IA properly claimed priority/benefit to any earlier-filed U.S. application (whether provisional or nonprovisional), there would still be no § 102(e)(1) date for the IA publication by WIPO, and the U.S. application publication and patent would still have a § 102(e) date of the actual filing date of later-filed § 111(a) application in the example above (01 Dec 2000).
- ✓ If a second, later-filed U.S. nonprovisional (§ 111(a)) application claimed the benefit of § 111(a) application in the example above, the § 102(e) date of the patent or publication of the second, later-filed U.S. application would still be the actual filing date of the § 111(a) application in the example above (01 Dec 2000).

ATTACHMENT III - US Patent Cover Sheets


US006372708B1

(12) **United States Patent**
Kasturi et al.

(10) **Patent No.: US 6,372,708 B1**
(45) **Date of Patent: Apr. 16, 2002**

(54) **LIQUID DETERGENT COMPOSITIONS COMPRISING POLYMERIC SUDS ENHANCERS**

(75) Inventors: **Chandrika Kasturi**, Cincinnati, OH (US); **Michael Gayle Schafer**, Alexandria; **Mark Robert Sivik**, Mitchell, both of KY (US); **Bernard William Kluesener**, Harrison, OH (US); **William Michael Scheper**, Lawrenceburg, IN (US)

(73) Assignee: **The Procter & Gamble Company**, Cincinnati, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/574,524**

(22) Filed: **May 18, 2000**

Related U.S. Application Data

(63) Continuation of application No. PCT/US98/24852, filed on Nov. 20, 1998.
(60) Provisional application No. 60/066,747, filed on Nov. 21, 1997, provisional application No. 60/091,672, filed on Jul. 2, 1998, and provisional application No. 60/087,714, filed on Jun. 2, 1998.

(51) **Int. Cl.**[7] **C11D 3/37**
(52) **U.S. Cl.** **510/475**
(58) **Field of Search** 510/476, 475, 510/244, 374, 383

(56) **References Cited**

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Primary Examiner—John Hardee
(74) *Attorney, Agent, or Firm*—Ian S. Robinson; Kevin L. Waugh; C. Brant Cook

(57) **ABSTRACT**

The present invention relates to liquid detergent compositions comprising a polymeric material which is a suds enhancer and a suds volume extender, said compositions having increased effectiveness for preventing re-deposition of grease during hand washing. The polymeric material which are suitable as suds volume and suds endurance enhancers comprise an effective amount of a polymeric suds stabilizer comprise:

i) units capable of having a cationic charge at a pH of from about 4 to about 12;

provided that said suds stabilizer has an average cationic charge density from about 0.0005 to about 0.05 units per 100 daltons molecular weight at a pH of from about 4 to about 12.

14 Claims, No Drawings

US006528477B2

(12) **United States Patent**
Kasturi et al.

(10) **Patent No.: US 6,528,477 B2**
(45) **Date of Patent: Mar. 4, 2003**

(54) **LIQUID DETERGENT COMPOSITIONS COMPRISING POLYMERIC SUDS ENHANCERS**

(75) Inventors: **Chandrika Kasturi**, Cincinnati, OH (US); **Michael Gayle Schafer**, Alexandria, KY (US); **Mark Robert Sivik**, Mitchell, KY (US); **Bernard William Kluesener**, Harrison, OH (US); **William Michael Scheper**, Lawrenceburg, IN (US)

(73) Assignee: **Procter & Gamble Company**, Cincinnati, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/108,043**

(22) Filed: **Mar. 27, 2002**

(65) **Prior Publication Data**

US 2002/0169097 A1 Nov. 14, 2002

Related U.S. Application Data

(63) Continuation of application No. 09/574,524, filed on May 18, 2000, now Pat. No. 6,372,708, which is a continuation of application No. PCT/US98/24852, filed on Nov. 20, 1998

(60) Provisional application No. 60/066,747, filed on Nov. 21, 1997, provisional application No. 60/091,672, filed on Jul. 2, 1998, and provisional application No. 60/087,714, filed on Jun. 2, 1998.

(51) **Int. Cl.**[7] **C11D 3/37**

(52) **U.S. Cl.** **510/476**; 510/475

(58) **Field of Search** 510/475, 476

(56) **References Cited**

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(57) **ABSTRACT**

The present invention relates to liquid detergent compositions comprising a polymeric material which is a suds enhancer and a suds volume extender, said compositions having increased effectiveness for preventing re-deposition of grease during hand washing. The polymeric material which are suitable as suds volume and suds endurance enhancers comprise an effective amount of a polymeric suds stabilizer comprise:

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13 Claims, No Drawings